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SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR
MISSOURI AND ARKANSAS RIVER BASINS.

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Soil Conservation Service
U. S. Department of Agriculture
Washington, D. C.

March 1, 1937

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by Bureau of Agricultural Engineering of the U. S. Department of Agriculture, in cooperation with State departments, other Federal bureaus and local organizations. 1/

Status of precipitation as of October 1 to March 1: Central Montana reports precipitation to be 87 percent normal; Western Montana, 82 percent normal. Twenty-one precipitation stations 6,000 feet or more in elevation east of the divide in Wyoming show precipitation 81 percent normal. Precipitation in the South Platte River Basin is less than normal. Seven precipitation stations 6,000 feet or more in elevation in the Arkansas River Basin show precipitation 84 percent normal.

In the Laramie River Basin the snow has a good density, but on the average is less in depth than last year at this time. For the North Platte in Wyoming, the snow cover is about 80 percent of normal. The snow conditions in the Big Horn Mountains in Wyoming have improved during the past month but are still deficient.

For Colorado, in the South Platte drainage, the snow cover is generally light. In the Poudre, Big Thompson and Upper South Platte in South Park, the snow is about 50 percent normal. In North Park, North Platte drainage, the snowfall is light. For the Upper Arkansas River drainage, the snow cover is about 60 percent in comparison with that of last year at this time.

Reservoir storage in northern Wyoming is normal, but in the central and southern part of the state it is below normal. Soil moisture is deficient in most sections of Wyoming. Storage on the South Platte in Colorado is normal except on the tributaries in the northern part of the State. Storage on the Arkansas is below normal. The moisture content of the soil is fair in the upper Arkansas Basin but deficient in the lower valley.

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Summary of Federal and State Cooperative Snow Surveys
Bureau of Agricultural Engineering, U. S. Dept. Agr.; Forest Service; Colo. Agri. Expt. Station
Issued March 12, 1937. Colo. Expt. Station, Fort Collins, Colo.

Tributary Basins (Primary & Secondary & Snow Courses)	Location State : Sec. : cr Latitude & Longitude	Range Elev.	Snow Cover Measurements		
			Average Snow Depth	Average Mar. 1, 1937 : Mar. 1, 1936 (Inches) :	Average Mar. 1, 1937 : Mar. 1, 1936 (Inches) :
JEFFERSON RIVER					
Camp Creek 2/ East Fork R. Sta. 2/ Elkhorn Hot Springs Gibbons Pass Moose Creek 2/ Storm Lake 2/	Idaho 21 Mont. 16 Mont. 15 Mont. 14 Idaho 22 & 27 Mont. 19	13N 2N 4S 12W 2S 27N 4N	36E 17W 12W 19W 21E 13W	6800 5400 8000 7000 6200 8135	30.9 20.2 24.8 56.5 47.9 15.2
MADISON RIVER					
Aster Creek 2/ Big Springs 2/ Hebgen Dam Lewis Lake Divide 2/ Twenty-one Mile 2/ West Yellowstone	Wyo. 34 Idaho 22 Mont. 1 Mont. 34 & 35	Lat. 44°17' 14N 11S 11S 13S	Long. 110°37' 44E 35E 40E 55E 55E	7700 6500 6550 7900 7150 6700	61.5* 63.1 46.5 90.0* 46.1 39.5
GALLATIN RIVER					
Hood Meadow Mystic Lake No. 1 Mystic Lake No. 2 Specimen Creek Twenty-one Mile 2/ Upper Hyalite Devils Slide	Mont. 22 Mont. 31 Mont. 31 Mont. 25 Mont. 1 Mont. 25 Mont. 11 & 14	4S 3S 3S 9S 11S 4S 5S	6E 7E 7E 5E 5E 6E 6E	6600 6600 6600 6850 7150 6760 8300	23.1 19.5 20.0 — — 30.2 52.9

*Observations made February 16.

				Snow Cover Measurements			
Tributary Basins (Primary & Secondary & Snow Courses)	Location State : Sec. or Latitude & Longitude	Range	Elev.	Snow Depth Mar. 1, 1937: Mar. 1, 1936 (Inches)	Average Water Depth Mar. 1, 1937: Mar. 1, 1936 (Inches)	Average Water Depth (Inches)	
MISSOURI RIVER (Between Helena & Great Falls)							
<u>Tennmile Creek</u>							
Chessman Reservoir	Mont. 2	8N	6200	21.4	13.2	3.8	
Tennmile Creek, Lower	Mont. 13	8N	6250	26.3	20.8	5.0	
Tennmile Creek, Middle	Mont. 13	8N	7000	37.5	28.1	6.7	
Tennmile Creek, Upper	Mont. 19	8N	8000	40.6	33.0	8.5	
<u>Little Prickley Pear Creek</u>							
Stemple Pass	Mont. 16	13N	7W	6900	33.3	37.2	
<u>Smith Creek</u>							
Kings Hill	Mont. 35	15N	7E	7800	40.1	48.4	
<u>Sun River</u>							
Goat Mountain	Mont.	Lat. 47° 31', Long. 112° 55'	7000	32.8	31.7	8.2	
<u>MARIAS RIVER</u>							
Desert Mountain 2/ Marias Pass	Mont. 24	31N	19W	5600	50.7	—	
	Mont.	Lat. 48° 19'	, Long. 113° 21'	5200	52.0	51.1	
<u>MILK RIVER</u>							
Grace Lake 2/ Kintla Creek No. 4 2/	Mont. 14	35N	19W	4500	51.7	—	
	Mont. 6	37N	21W	4300	35.3	10.7	

Snow Cover Measurements					
Tributary Basins	Location	Average Snow Depth	Average Water Depth		
(Primary & Secondary & Snow Courses)	State : Sec or Latitude & Longitude :	Mar. 1, 1937 : Mar. 1, 1936 : (Inches) : (Inches)	Mar. 1, 1936 : Mar. 1, 1937 : Mar. 1, 1936 : (Inches) : (Inches)	(Inches) : (Inches)	

YELLOWSTONE RIVER

Headwaters of Yellowstone River

Camp Senia	Mont.	2	85	18E	7870	17.6	--
Cooke City	Mont.	25	95	14E	7400	28.0	--
Lake Camp	Wyo.	Lat. 44°34' N., Long. 110°24' W.			7850	35.9	--

Shoshone River

Brooks Lake No. 2	Wyo.	23	4½N	110W	9200	44.5	--

Big Horn River

Brooks Lake No. 2	Wyo.	23	4½N	110W	9200	44.5	--
Ranger Creek	Wyo.	32	53N	88W	8800	39.7	--
Boaring Fork	Wyo.	7	31N	101W	10200	13.5	--
Shell Creek R. Sta.	Wyo.	19	53N	88W	7700	30.0	--
Sheridan Creek R. Sta.	Wyo.	3	42N	109W	7500	19.3	--
Whorten Meadow	Wyo.	18	31N	101W	9200	12.0	--

Powder River

Red Fork	Wyo.	18	43N	85W	7500	40.8	--

11.9

5.7

4.1

3.7

3.2

3.0

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Tributary Basins (Primary & Secondary & Snow Courses)	Location	Elev.	Snow Cover Measurements		
			Average Snow Depth	Mar. 1, 1937: Mar. 1, 1936 (Inches)	Mar. 1, 1937: Mar. 1, 1936 (Inches)
NORTH PLATTE RIVER Headwaters North Platte					
Big Creek Lake	Colo. 9	82W	42.6	—	9.9
Bottle Creek	Wy. 24	14N	8200	—	—
Columbine	Colo. 21	5N	9300	59.6	15.0
Headquarters Park	Wy. 27	16N	80W	—	—
North Barrett Creek	Wy. 27	16N	81W	9400	46.3
Old Battle	Wy. 25	14N	85W	9800	11.9
Park View	Colo. 24	5N	78W	9200	30.1
Ryan Park	Wy. 30	16N	80W	8400	27.6
Weidner Springs	Wy. 27	14N	85W	9000	45.0
West Portal Greeley- Poudre Tunnel	Colo. 7	8N	75W	8600	27.5
Sweetwater River					
Gramnier Meadows	Wy. 19	30N	100W	9000	40.8
Laramie River					
Brooklyn Lake	Wy. 11	16N	79W	10200	58.0
Fox Park	Wy. 21	13N	78W	9200	22.8
Hairpin Turn	Wy. 24	16N	79W	9000	—
Libby Lodge	Wy. 29	16N	78W	8800	—
Pole Mountain	Wy. 35	15N	72W	8700	8.6

Laramie River

Brooklyn Lake	Wy. 11	16N	79W	10200	58.0	—	18.2
Fox Park	Wy. 21	13N	78W	9200	22.8	—	5.2
Hairpin Turn	Wy. 24	16N	79W	9000	—	—	—
Libby Lodge	Wy. 29	16N	78W	8800	—	—	—
Pole Mountain	Wy. 35	15N	72W	8700	8.6	—	1.4

Tributary Basins (Primary & Secondary & Snow Courses)	Location			Snow Cover Measurements		
	State : Sec.	Twp.	Range :	Average Snow Depth		
				Mar. 1, 1937: Mar. 1, 1936 : Mar. 1, 1937: Mar. 1, 1936 (Inches) : (Inches) : (Inches) : (Inches)		
SOUTH PLATTE RIVER						
Big South	Colo.	33	8N	75W	8600	—
Cameron Pass	Colo.	2	6N	76W	10285	41.2
Chambers Lake	Colo.	6	7N	75W	9000	12.6
Deadman Hill	Colo.	26	10N	75W	10950	40.1
East Portal Moffat Tunnel	Colo.	2	2S	74W	9400	4.3
Fairplay	Colo.	33	9S	77W	10000	—
Hidden Valley	Colo.	24	5N	74W	9000	6.6
Hoosier Pass	Colo.	13	8S	78W	11400	25.4
Jefferson Creek	Colo.	23	7S	76W	10050	4.6
Loveland Pass	Colo.	27	4S	76W	10100	33.1
Pole Mountain	Wyo.	35	15N	72W	8700	8.6
University Camp	Colo.	28	1N	73W	10000	0.0
Wild Basin	Colo.	24	3N	74W	10000	31.2
ARKANSAS RIVER						
Four Mile Park	Colo.	23	11S	81W	9700	5.6
Fremont Pass	Colo.	2	8S	79W	11300	42.8
LaVeta Pass	Colo.	23	23S	70W	10500	25.5
Marshall Creek	Colo.	24	48N	6E	10846	40.6
Poncha Creek	Colo.	19	48N	7E	10590	22.1
Tennessee Pass	Colo.	21	8S	80W	10200	24.8
Twin Lakes Tunnel	Colo.	22	11S	82W	10125	—
Whiskey Creek	Colo.	21	32N	67W	10250	26.2

1/ The snow measurements are made principally by field personnel of the following Federal Government organizations: Forest Service, National Park Service, Geological Survey, Bureau of Reclamation, and Montana Agricultural Experiment Station. This work is otherwise conducted cooperatively with the War Department, the State Engineers of Wyoming and Colorado, U. S. Weather Bureau, U. S. Geological Survey, Montana and Colorado Agricultural Experiment Stations, and various municipalities, irrigation associations, power companies, and others.

2/ In adjacent drainage.

3/ Common to two drainages.

